Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A process for fabricating a microelectrode, comprising: a) providing a substrate comprising at least one polymer micro-ridge, wherein the polymer micro-ridge comprises an upper surface and two walls, the two walls forming an angle with a lower surface; b) depositing a metal thin film on the upper surface, the two walls, and the lower surface; and c) etching a predetermined amount of the deposited metal thin film on the lower surface to form the microelectrode.

2. (Original) The process of Claim 1, wherein etching a predetermined amount of the deposited metal thin film on the lower surface comprises wet etching, dry etching, ion beam bombardment, or any combination thereof.

3. (Original) The process of Claim 1, wherein providing the substrate comprising at least one polymer micro-ridge comprises molding, imprinting, photolithographic patterning, imprint lithography, or any combination thereof.

4. (Withdrawn) The process of Claim 1, wherein providing the substrate comprising at least one polymer micro-ridge comprises dry etching a polymer thin film.

5. (Original) The process of Claim 1, wherein the polymer micro-ridge comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.

6. (Original) The process of Claim 1, wherein the lower surface comprises silicon dioxide.

7. (Original) The process of Claim 1, wherein the lower surface comprises a polymer.

8. (Original) The process of Claim 7, wherein the lower surface comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.

9. (Original) The process of Claim 1, wherein the polymer micro-ridge and the lower surface comprises the same polymer.

10. (Original) The process of Claim 1, wherein the angle between the two walls and the lower surface is about 90 degrees.

11. (Original) The process of Claim 1, wherein the upper surface and lower surface are substantially parallel.

12. (Original) The process of Claim 11, wherein the walls are substantially perpendicular to the upper surface and the lower surface.

13. (Original) The process of Claim 1, wherein the substrate comprises a plurality of polymer micro-ridges.

14. (Original) The process of Claim 13, wherein the micro-ridges are interdigitated.

15. (Original) The process of Claim 1, wherein the metal thin film is selected from the group consisting of gold, platinum, titanium, and any combination thereof.

16. (Original) The process of Claim 1, wherein depositing the metal thin film according to a process comprises physical vapor deposition, thermal evaporation, electroplating, or any combination thereof.

17. (Original) A process for fabricating a microelectrode comprising: a) providing a substrate comprising at least one polymer micro-ridge, wherein the polymer micro-ridge comprises an upper surface and at least one wall, the wall forming an angle with a lower surface; b) depositing a metal thin film on the upper surface, the wall, and the lower surface; c) etching a predetermined amount of the deposited metal thin film on the lower surface or the deposited metal thin film on the upper surface; and d) etching a predetermined amount of the other of the deposited metal thin film on upper surface or the deposited metal thin film on the lower surface, thereby leaving a metal thin film on the wall.

18. (Original) The process of Claim 17, wherein etching a predetermined amount of the deposited metal thin film on the lower surface, upper surface, or both according to a process

comprises wet etching, dry etching, ion beam bombardment, or any combination thereof.

19. (Original) The process of Claim 17, comprising first etching a predetermined amount of the deposited metal thin film on the upper surface, and then etching a predetermined amount of the deposited metal thin film on the lower surface.

20. (Original) The process of Claim 17, comprising first etching a predetermined amount of the deposited metal thin film on the lower surface, and then etching a predetermined amount of the deposited metal thin film on the upper surface.

21. (Original) The process of Claim 17, wherein providing the substrate comprising at least one polymer micro-ridge comprises molding, imprinting, photolithographic patterning, imprint lithography, or any combination thereof.

22. (Withdrawn) The method of Claim 17, wherein providing the substrate comprising at least one polymer micro-ridge comprises dry etching a polymer thin film.

23. (Original) The process of Claim 17, wherein the polymer micro-ridge comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.

24. (Original) The process of Claim 17, wherein the lower surface comprises silicon dioxide.

25. (Original) The process of Claim 17, wherein the lower surface comprises a polymer.

26. (Original) The process of Claim 25, wherein the lower surface comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.

27. (Original) The process of Claim 17, wherein the polymer micro-ridge and the lower surface comprise the same polymer.

28. (Original) The process of Claim 17, wherein the angle between the two walls and the lower surface is about 90 degrees.

29. (Original) The process of Claim 17, wherein the upper surface and lower surface are substantially parallel.

30. (Original) The process of Claim 29, wherein the walls are substantially perpendicular to the upper surface and the lower surface.

31. (Original) The process of Claim 17, wherein the substrate comprises a plurality of polymer micro-ridges.

32. (Original) The process of Claim 31, wherein the polymer micro-ridges are interdigitated.

33. (Original) The process of Claim 17, wherein the metal thin film is selected from the group consisting of gold, platinum, titanium, and any combination thereof.

34. (Original) The process of Claim 17, wherein depositing the metal thin film according to a process comprises physical vapor deposition, thermal evaporation, electroplating, or any combination thereof.